

REMARKS

In the Office Action of January 7, 2008, original claims 1-4 of this application were rejected under 35 USC 102(b) as assertedly anticipated by Shinkai et al. U.S. Patent No. 4,821,504. The applicant respectfully disagrees and therefore traverses this rejection. Reconsideration is respectfully requested.

The present invention provides an improvement in the operation of traveling service units commonly used in rotor spinning machines. As more fully described in the body of this application, such service units typically travel on guide rails along the plural yarn spinning stations aligned along the opposite longitudinal sides of a rotor spinning machine for, among other functions, supplying the spinning stations with empty replacement bobbins after an existing bobbin becomes fully wound with yarn. In order to minimize stoppage times of the spinning stations when executing bobbin changes, a plurality of service units are typically used on a rotor spinning machine, for example two service units on each longitudinal side of the machine.

It is known in such rotor spinning machines to provide a bobbin magazine to store and supply empty bobbins to the various spinning stations of the machine. The bobbin magazine is typically situated at one end of the machine and operates in conjunction with a transport conveyor belt to deliver empty bobbins to the spinning stations when needed. Each service unit is adapted, when positioned at a spinning station requiring a bobbin change, to transmit a request for an empty bobbin to the bobbin magazine, whereupon an empty bobbin is transported by the associated conveyor belt to the individual spinning station. Each service unit has a mechanism adapted to remove a bobbin from the conveyor belt and then to position the bobbin in a winding disposition at the particular spinning station.

When one of multiple service units has requested an empty bobbin for a spinning station further away from the bobbin magazine than another service unit, and before the bobbin has arrived at the first service unit, the second service unit positioned closer to the bobbin magazine also requests a bobbin, it may occur that the bobbin intended for the first service unit is removed from the conveyor belt by the second service unit. A delay then occurs at the first spinning station as a result, which can lead to an undesirably long stoppage of that spinning station before finally receiving an empty bobbin.

The present invention avoids this problem by equipping the control device of such a rotor spinning machine with an arrangement, operative when a first one of the service units transmits a bobbin request to the bobbin magazine for a working station disposed more remotely (relative to the direction of bobbin conveyance) from the bobbin supplying device than a second one of the service units disposed more closely to the bobbin supplying device, to suppress a subsequent bobbin request from the second service unit until the bobbin request from the first service unit has been fulfilled. In this manner, the second service unit is prevented from taking from the conveyance device the bobbin being delivered to the first service unit.

While it is believed that the claims as originally presented in this application patentably define these distinctive features of the present invention, the applicant has rewritten and replaced independent claim 1, now cancelled, with new independent claim 5, presented herewith, which more appropriately comports with U.S. patent practice and is believed to better clarify the novelty and non-obviousness of the invention. Dependent claims 2-4 have been amended to conform their dependency to new independent claim 5. Thus, as now amended, claims 2-5 are presented in this application.

The Shinkai et al. reference neither discloses nor even remotely suggests this fundamental conceptual novelty of the present invention. Shinkai et al. disclose a parallel grouping of several spinning machines supported by a single so-called “working machine”. The working machine travels on guide rails extending along the end of the group of spinning machines. The working machine consists of a central carriage and a pair of automatic doffer apparatuses on opposite sides of the carriage (Col. 5, Lines 35 to 47). In operation, the working machine maintains one spinning machine at a time out of the grouping of spinning machines according to a priority determined by the signaling for the working machine. When the working machine reaches the end of a spinning machine which has called for the working machine, each of the two doffer apparatuses leave the carriage to travel along a respective longitudinal side of such spinning machine. As such, there is no issue or concern in the operation of the Shinkai et al. system for any interference by one doffer apparatus with the operation of the other doffer apparatus, as the two doffer apparatuses are operative along different sides of a given machine servicing mutually exclusive sets of the machine’s work stations. In turn, Shinkai et al. has no need for, and no reason or need to utilize the present invention.

The object of Shinkai instead is to provide a system for controlling the priority with which the working machine is delivered to the respective spinning machines in the overall machine grouping in order to minimize times of non-productivity of an entire spinning machine when a doffing operation is required to be performed on every work station of a given machine. Thus, the control system of Shinkai et al. requires a knowledge of the differing operational conditions respectively at each of the spinning machines of the group as criteria in order to deliver the working machine carriage first to the individual one of the spinning machines with the highest priority. For example, the yarn count of a yarn being produced on a given spinning

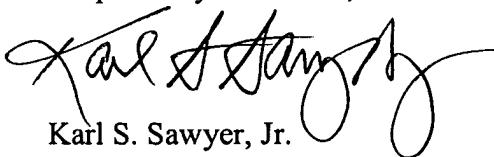
machine will affect the priority for doffing as between different machines. Spinning machines which produce yarn with a thicker yarn count more quickly produce full yarn packages and thereby require more frequent doffing by the working machine than spinning machines which produce yarn with a thinner yarn count which take longer to produce full yarn packages. This is one criterion according to Shinkai et al. to control the order of priority for deploying the working machine. Another criterion is the achievement of a predetermined yarn package size. Therefore, to monitor the achievement of such criteria at each spinning machine, Shinkai et al. utilizes a sequential controller which is connected to a main controller disposed at the end of the spinning machine grouping to transmit signal data and instructions (Col. 6, line 22 to Col. 7, line 11). The main controller follows a control program to determine the priority in which to order the deployment of the working machine to the individual spinning machines, as depicted in Fig. 5A to Fig. 6.

Shinkai et al. thus does not disclose a control device in a rotor spinning machine configured to control at least two service units operating on the same plurality of spinning stations, e.g., operating on the spinning stations at one longitudinal side of a spinning machine. There is no recognition at all in the description of Shinkai et al. of the possible situation in which a bobbin request for a first service unit at a first work station may interfere with a bobbin request of a second service unit at a second work station of the same spinning machine more closely disposed to a bobbin supply device, which could cause a bobbin intended for delivery to the first work station to be taken instead by the second service unit. In turn, therefore, Shinkai et al. does not and cannot teach or suggest a solution to such a problem that Shinkai et al. do not even recognize. In sum, the provision of a control device which is configured to suppress a

subsequent bobbin request according to the invention is neither disclosed nor made obvious by Shinkai et al.

For all of the reasons set forth above, it is respectfully submitted that the present invention as defined in the claims as presented is patentably distinguished over the Shinkai et al. reference, and the deficiencies of the Shinkai et al. reference are not overcome by the teachings of any of the other prior art of record. Favorable reconsideration and early allowance and passage to issuance of this application are respectfully requested.

Respectfully submitted,



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